

## PATENT COOPERATION TREATY

## PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY  
(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference clc/ph/8152int		FOR FURTHER ACTION See Form PCT/IPEA/416																	
International application No. PCT/IB 2003/001880	International filing date (day/month/year) 22-04-2003	Priority date (day/month/year) 16-07-2002																	
International Patent Classification (IPC) or national classification and IPC H04M1/02																			
Applicant NOKIA CORPORATION ET AL																			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>9</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (sent to the applicant and to the International Bureau) a total of <u>5</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p> <p>4. This report contains indications relating to the following items:</p> <table border="0"> <tr> <td><input checked="" type="checkbox"/> Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/> Box No. II</td> <td>Priority</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/> Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/> Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/> Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input checked="" type="checkbox"/> Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table>				<input checked="" type="checkbox"/> Box No. I	Basis of the report	<input type="checkbox"/> Box No. II	Priority	<input checked="" type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/> Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/> Box No. VI	Certain documents cited	<input type="checkbox"/> Box No. VII	Certain defects in the international application	<input checked="" type="checkbox"/> Box No. VIII	Certain observations on the international application
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Name and mailing address of the IPEA/SE Patent- och registreringsverket Box 5055 S-102 42 STOCKHOLM Facsimile No. +46 8 667 72 88		Authorized officer  Roland Landström /ITW Telephone No. +46 8 782 25 00																	

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# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International Application No.

PCT/IB 2003/001880

## Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This report is based on a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of:

- ☐ international search (under Rules 12.3 and 23.1(b))  
☐ publication of the international application (under Rule 12.4)  
☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

☐ the international application as originally filed/furnished

☒ the description:

pages 1, 3 - 7 as originally filed/furnished

pages\* 2 - 2a received by this Authority on 17-09-2004

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☒ the claims:

pages \_\_\_\_\_ as originally filed/furnished

pages\* \_\_\_\_\_ as amended (together with any statement) under Article 19

pages\* 9 - 11 received by this Authority on 17-09-2004

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☒ the drawings:

pages 1 - 5 as originally filed/furnished

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

pages\* \_\_\_\_\_ received by this Authority on \_\_\_\_\_

☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.

3. ☐ The amendments have resulted in the cancellation of:

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

☐ the description, pages \_\_\_\_\_

☐ the claims, Nos. \_\_\_\_\_

☐ the drawings, sheets/figs \_\_\_\_\_

☐ the sequence listing (*specify*): \_\_\_\_\_

☐ any table(s) related to the sequence listing (*specify*): \_\_\_\_\_

\* If item 4 applies, some or all of those sheets may be marked "superseded."

# INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International Application No.

PCT/IB 2003/001880

## Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 12 and 17 - 19

because:

☐ the said international application, or the said claims Nos. \_\_\_\_\_  
relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. \_\_\_\_\_  
are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. \_\_\_\_\_ are so inadequately supported  
by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 12 and 17 - 19

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the  
Administrative Instructions in that:

the written form ☐ has not been furnished

☐ does not comply with the standard

the computer readable form ☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with  
the technical requirements provided for in the Annex C-bis of the Administrative Instructions.

☐ See Supplemental Box for further details.

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International Application No.

PCT/IB 2003/001880

Box No. V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

## 1. Statement

Novelty (N)	Claims	<u>1 - 11, 13 - 16, 20</u>	YES
	Claims		NO
Inventive step (IS)	Claims		YES
	Claims	<u>1 - 11, 13 - 16, 20</u>	NO
Industrial applicability (IA)	Claims	<u>1 - 11, 13 - 16, 20</u>	YES
	Claims		NO

## 2. Citations and explanations (Rule 70.7)

The following documents were cited in the corrected International Search Report:

A: US 6082535 A  
B: US 2002065054 A1  
C: DE 19961707 A1  
D: WO 0203828 A1  
E: US 5521794 A  
F: US 20010022840 A1

The invention relates to a mobile telephone having an "engine assembly" comprising a display and a plurality of switches.

The purpose of the invention is unclear. The absence of an (invisible?) intermediate rigid cover seems not to allow a user greater choice in adapting the appearance of the mobile telephone. Adapting the appearance of the telephone by attaching at least one leather or fabric portion does not solve a technical problem.

The invention is intended to reduce the size and weight, provide shock absorption, prevent water ingress and simplify the keypad.

According to the solution in claims 1, 16 and 20, a user replaceable flexible cover overlies, without an intermediate rigid cover, and snugly fits the engine assembly and comprises an integrated keypad, for user input, aligned with the plurality of switches, wherein the flexible cover comprises a flexible substrate and at least one leather or fabric portion attached to the substrate.

.../...

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.  
Continuation of: Box V

Document B (page 1, column 1, line 1 - page 4, column 1, line 3, figures 1 - 5B, abstract) discloses a mobile station having a chassis (101, engine assembly) comprising a display (102), a plurality of switches, a front cover (105, 200), a back cover (109), a replaceable (chapter 0036), flexible, elastomeric cover (107, 300, 501, 511, 521) having an aperture (321) aligned with the display (102) and an integrated keypad (chapters 0038 - 0041, figures 5a- 5c) with projections (post 525) on the interior surface aligned with the switches. The flexible, elastomeric cover (107, 300, 501, 511, 521) has a slight bias toward a shape that encloses a volume having dimensions of height, width and length that may be slightly smaller than the height, width and length of the combined front cover, mobile station chassis, and back cover assembly (chapter 0033). Protruding parts of the mobile station and front cover may have an orientating function in relation to the elastomeric cover (chapter 0034). Because components on an upper-circuit board may be fragile or susceptible to short-circuiting, it is common practice to enclose the upper-circuit board with a cover (chapter 0026). The front cover (105) offers protection of the mobile station chassis (chapter 0028). The front cover (200) may be made of a material selected to be stiff, yet sufficiently flexible for button-levers or lever arms that may be deflected by ordinary finger strength of a person (chapter 0029). Hence, the front cover (200) is flexible and belongs to the engine assembly. The elastomeric cover (107, 300, 501, 511, 521) absorbs sudden shocks (chapter 0015).

The invention claimed in claims 1, 15, 16 and 20 differs from what is known from document B essentially in that the front cover (105, 200) (i.e. the intermediate cover) is omitted and that at least one leather or fabric portion is attached to the flexible elastomeric cover (107, 300, 501, 511, 521).

The technical problem is how to reduce the size and weight of the mobile station, how to provide a more flexible mobile station or how to further improve the resistance to sudden shocks.

.../...

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.  
Continuation of: BOX V

The purpose and the location of the at least one leather or fabric portion are unclear. Whether a technical problem is solved by attaching at least one leather or fabric portion is unclear. Altering the appearance of the mobile station of document B by attaching at least one leather or fabric portion to the flexible elastomeric cover (107, 300, 501, 511, 521) does not solve a technical problem.

It would be an obvious possibility to a person skilled in the art who wants to further improve the resistance to sudden shocks of the mobile station of document B to attach at least one leather or fabric portion to the flexible elastomeric cover (107, 300, 501, 511, 521), especially considering no unexpected technical effect is obtained. Furthermore, the use of leather casings for a mobile telephone is well known, for example, from document D (page 1, lines 5 - 10).

It would also be an obvious possibility to a person skilled in the art who wants to reduce the number of parts, the weight and the size of the mobile station of document B to exclude the front cover (105, 200) (i.e. the intermediate cover), especially considering no unexpected technical effect is obtained.

Therefore, the invention claimed in claims 1, 15, 16 and 20 lacks an inventive step.

Document F (figures 2 - 3) shows a front-cover having an integrated keypad (12) and a transparent display window (11, 40) for a portable phone (chapters 0018 - 0031). The cover includes an external pad (10) and a housing (20) for maintaining a shape (chapter 0018). The external pad (10) is made of a thin film of an elastic, impact absorbing, synthetic resin (chapter 0019). The buttons (30) of the keypad (12) push the electric contact points formed at a circuit substrate (chapter 0022). The cover is flexible at least at a groove (13) formed around each button (30).

The invention claimed in claims 1, 16 and 20 differs from what is known from document F essentially in that at least one leather or fabric portion is attached to the cover.

.../...

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.  
Continuation of: Box V

The purpose and the location of the at least one leather or fabric portion are unclear. Whether a technical problem is solved by attaching the at least one leather or fabric portion is unclear. Altering the appearance of the portable phone by attaching at least one leather or fabric portion to the flexible external pad (10) does not solve a technical problem.

The technical problem is how to further improve the impact absorbance.

Whether the housing (20) that maintains a shape (chapter 0018 in document F) is rigid or has some flexibility is unclear. However, it would be obvious to a person skilled in the art who wants to further improve impact absorbance of the mobile station of document F to use a flexible housing (20).

It would be an obvious possibility to a person skilled in the art who wants to further improve impact absorbance of the mobile station of document F to attach at least one leather or fabric portion to the cover, especially considering no unexpected technical effect is obtained. Furthermore, the use of leather for mobile telephone casings is well known, for example, from document D (page 1, lines 5 - 10). Therefore, the invention claimed in claims 1, 16 and 20 lacks an inventive step.

In claims 2 - 11 and 13 - 15, slight constructional variations are suggested that are obvious to a person skilled in the art, especially considering similar features are well known in similar art, for example from documents A - F. Consequently, the invention claimed in 2 - 11 and 13 - 15 lacks an inventive step.

Documents A, C, D and E disclose a similar technique:

Document A (column 1, line 1 - column 4, line 8, figures 1 - 3, abstract) discloses a transparent, elastic or resilient cover/bag (26) having a sealable insertion aperture (28) for a cell phone (10). The cover/bag (26) can shrink onto the cell phone (10) and conform to the contour thereof.

.../...

## Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: V

Document C (column 1, line 1 - column 3, line 15, figure 1, abstract) discloses a cover (foil 23) having a hole (24) aligned with the display (4) of a mobile telephone (2).

Document D (page 1, line 1 - page 14, line 5, figures 1 - 4, abstract) discloses a mainly rigid casing (2) with transparent elastic material (4) so that the keys of a telephone can be operated through the material and so that the display can be read.

Document E (column 1, line 58 - column 3, line 6, figures 1 - 4, abstract) discloses a flexible radio housing (151) for a portable radio. According to column 1, lines 17 - 20, the purpose is to reduce the thickness of, for example, a two-way radio.



**Box No. VIII Certain observations on the international application**

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

Claims 1 - 11, 13 - 16 and 20 are not in the two-part form in accordance with Rule 6.3(b) PCT.

2

inter-operation of these parts to operate as a cellular mobile phone is well known to persons skilled in the art, who will additionally appreciate that although a GSM compliant engine assembly 10, as in this example, has a SIM card 28 it may not be present in engine assemblies for other cellular communication standards.

Figure 1b shows an alternative design of covers for the phone 2. In this example, the rigid plastic back cover 8 is permanently attached to the engine assembly 10 and is not removable. The rigid plastic front cover 4 is removable and a loose keypad 6 is located between it and the engine assembly 10 when the phone 2 is assembled.

The rigid plastic covers 4 and 8 are three-dimensional and provide a recognisable shape to the phone. They additionally may protect the engine assembly 10 against damage and water ingress and are easily made by injection moulding. For these reasons rigid covers, and plastic covers in particular, are universally used to enclose the engine assembly 10.

The inventor has realised that it would be desirable to have a greater range of fashionable phones. In particular, the inventor has realised that it would be desirable to allow a user greater choice in adapting the appearance of their phones.

According to one aspect of the present invention there is provided a mobile phone comprising: an engine assembly comprising a display and a plurality of switches; and a flexible cover overlying, without an intermediate rigid cover, and snugly fitting the engine assembly comprising an integrated keypad, for user input, aligned with the plurality of switches, wherein the flexible cover comprises a flexible substrate and at least one leather or fabric portion attached to the substrate.

The flexible cover may be three dimensional and used to define the appearance and/or shape of a phone. Embodiments of the invention therefore provide for a greater range of fashionable phones without compromising the size

2a

or weight of the phone. Embodiments of the invention overcome the existing

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AMENDED SHEET

ART 84 AMDT

88

CLAIMS

1. A mobile telephone comprising:  
5 an engine assembly comprising a display and a plurality of switches; and  
a flexible cover overlying, without an intermediate rigid cover, and snugly  
fitting the engine assembly and comprising an integrated keypad, for user input,  
aligned with the plurality of switches, wherein the flexible cover comprises a flexible  
substrate and at least one leather or fabric portion attached to the substrate.

10 2. A mobile phone as claimed in claim 1, wherein the flexible cover is made from  
flexible material which defines a cavity for receiving the engine assembly and has an  
insertion aperture through the material to the cavity through which the engine  
assembly can fit.

15 3. A mobile phone as claimed in claim 2, further comprising means for closing or  
restricting the insertion aperture after the engine assembly has been inserted.

20 4. A mobile phone as claimed in any preceding claim wherein the flexible cover  
comprises an aperture aligned with the display.

5. A mobile phone as claimed in any preceding claim, comprising a plurality of  
fabric or leather portions attached to the substrate and/or each other.

25 6. A mobile phone as claimed in claim 5, wherein portions of the plurality of  
leather or fabric portions overlap.

7. A mobile phone as claimed in claim 6, wherein portions of the underlying  
substrate are exposed.

30 8. A mobile phone as claimed in any preceding claim, wherein the integrated

AMENDED SHEET

109

keypad has a plurality of key portions on an exterior surface of the flexible cover and a plurality of corresponding projections on the interior surface of the flexible cover, each of said projections being arranged to actuate one of the plurality of switches of the engine assembly.

9. A mobile phone as claimed in any preceding claim, wherein the flexible cover and the engine assembly have corresponding projections and receptacles for aligning the flexible cover correctly with the engine assembly.

10. A mobile phone as claimed in any preceding claim, wherein the flexible cover is made from fabric, elastically deformable material, or leather.

11. A mobile phone as claimed in any preceding claim, wherein the flexible cover is substantially formed from one-piece of material.

12. A mobile phone as claimed in any preceding claim, wherein the flexible cover is substantially made in accordance with the techniques used in the fabrication of sports shoes.

13. A mobile phone as claimed in any preceding claim, wherein the flexible cover has an elastic and waterproof substrate adjacent the engine assembly.

14. A mobile phone as claimed in any preceding claim, wherein the flexible cover has a moulded elastomer substrate adjacent the engine assembly.

15. A mobile phone as claimed in any preceding claim, wherein the flexible cover is user replaceable.

16. A user replaceable flexible cover for a mobile phone as claimed in any preceding claim.

41 10

17. A mobile phone substantially as hereinbefore described with reference to and/or as shown in Figs. 3 to 7b.

5 18. A flexible cover substantially as hereinbefore described with reference to and/or as shown in Figs. 3, 4 and b.

10 19. A flexible cover, manufactured in accordance with the techniques used in the sports shoe industry, substantially as hereinbefore described with reference to and/or as shown in Figs. 3 to 7b.

20. A mobile telephone comprising:

15 an engine assembly comprising a display and a plurality of switches and a leather/fabric cover overlying, without an intermediate rigid cover, and snugly fitting the engine assembly and comprising an integrated keypad, for user input, aligned with the plurality of switches, wherein the flexible cover comprises a flexible substrate and at least one leather or fabric portion attached to the substrate.

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